accompanying Petition for a One-Month Extension of time is granted, the response will be due on February 7, 2003, and Applicant submits that this response is therefore timely submitted. Applicant provides the Request for Continued Examination and amendments and remarks detailed below, and respectfully request consideration and entry of all such amendments and remarks set forth below.

IN THE CLAIMS

Claims 10, 18-19 and 25-31 were previously cancelled without prejudice. Applicant now cancels, without prejudice, remaining claims 1-9, 11-17, 20-24 and 43-48, and notes that claims 32-42 were previously withdrawn from consideration. For clarity and ease of examination, Applicant presents newly-added claims 49-68. Applicant respectfully requests entry of the newly-added claims provided below.

49. A gas stream vortex mixing system for mixing a gas stream, the gas stream vortex mixing system comprising:

a duct provided with an inner surface defining a passageway for communicating a gas stream;

a wing having a first end, a second end, a upper surface, a lower surface and a uniform thickness between the upper and lower surfaces extending from the first to the second ends of the wing, the wing non-movably coupled within the passageway of the duct and configured to shed a vortex at an edge of the second end of the wing; and

a nozzle to discharge a mixture into the passageway, the nozzle located adjacent the edge of the second end of the wing such that the nozzle discharges the mixture

into the vortex at a point wherein the vortex is shed by the edge of the second end of the wing.

50. The gas stream vortex mixing system of Claim 49, wherein the nozzle is positioned to discharge the mixture in a direction of travel of the gas stream through the passageway of the duct to promote mixing of the mixture with the gas stream.

51. The gas stream vortex mixing system of Claim 49, wherein the nozzle is positioned to discharge the mixture in a direction substantially opposite a direction of travel of the gas stream through the passageway of the duct to promote mixing of the mixture with the gas stream.

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52. The gas stream vortex mixing system of Claim 49, further comprising:

a plurality of wings each having a first end, a second end, a upper surface, a lower surface and a uniform thickness between the upper and lower surfaces extending from the first to the second end thereof, the plurality of wings non-movably coupled within the passageway of the duct, each of the plurality of wings configured to shed a vortex at an edge of the second end thereof; and

a plurality of nozzles to discharge the mixture into the passageway, each of the plurality of nozzles located adjacent the edge of the second end of one of the plurality of wings such that each of the nozzles discharge the mixture into the vortex at a point wherein the vortex is shed by the edge of the second end of the plurality of wings.

53. The gas stream vortex mixing system of Claim 49, wherein the second end of the wing is provided with a second edge configured to shed a second vortex at the second edge of the second end of the wing and wherein the gas stream vortex mixing system further comprises:

a second nozzle to discharge the mixture into the passageway, the second nozzle located adjacent the second edge of the second end of the wing such that the second nozzle discharges the mixture into the second vortex at a point wherein the second vortex is shed by the second edge of the second end of the wing.

54. The gas stream vortex mixing system of Claim 49, wherein the wing is non-moveably coupled to the inner surface of the duct at a lift generating angle of attack such that the first end of the wing is positioned substantially upstream a direction of travel of the gas stream through the passageway and such that the second end of the wing is substantially down stream of the direction of travel of the gas stream through the passageway.

55. The gas stream vortex mixing system of Claim 54, further comprising a second wing having a first end, a second end, a upper surface, a lower surface and a uniform thickness between the upper and lower surfaces extending from the first to the second end of the second wing, the second wing non-movably coupled within the passageway of the duct and configured to shed a vortex at an edge of the second end of the second wing, and wherein second wing is non-moveably coupled to the inner surface of the duct at a lift generating angle of attack such that the first end of the second wing is positioned substantially

upstream the direction of travel of the gas stream through the passageway and such that the second end of the second wing is substantially down stream of the direction of travel of the gas stream through the passageway; and

a second nozzle to discharge a mixture into the passageway, the second nozzle located adjacent the edge of the second end of the second wing such that the second nozzle discharges the mixture into the vortex at a point wherein the vortex is shed by the edge of the second end of the second wing.

56. The gas stream vortex mixing system of Claim 55, wherein the wing and second wing are coupled to the inner surface of the duct such that the first ends of the wing and second wing are located substantially along a plane perpendicular to the direction of travel of the gas stream through the passageway of the duct.

57. The gas stream vortex mixing system of Claim 56, wherein the upper and lower surfaces of the wing defines an upper and lower arcuate shapes of the wing extending from the first end to the second end of the wing and wherein the upper arcuate shape of the wing is substantially similar to the lower arcuate shape of the wing.

58. A gas stream vortex mixing system for mixing a gas stream, the gas stream vortex mixing system comprising:

a duct provided with an inner surface defining a passageway for communicating a gas stream;

a first wing having a first end, a second end and configured to shed a vortex at an edge of the second end of the first wing, the first wing non-movably

coupled within the passageway of the duct such that the first end of the first wing is positioned along a plane within the passageway of the duct, the plane substantially perpendicular to a direction of travel of the gas stream through the passageway;

a second wing having a first end, a second end and configured to shed a vortex at an edge of the second end of the second wing, the second wing non-movably coupled within the passageway of the duct such that the first end of the second wing is positioned along the plane within the passageway of the duct substantially perpendicular to the direction of travel of the gas stream through the passageway;

a first nozzle to discharge a mixture into the passageway, the first nozzle located adjacent the edge of the second end of the first wing such that the first nozzle discharges the mixture into the vortex at a point wherein the vortex is shed by the edge of the second end of the first wing; and

a second nozzle to discharge a mixture into the passageway, the second nozzle located adjacent the edge of the second end of the second wing such that the second nozzle discharges the mixture into the vortex at a point wherein the vortex is shed by the edge of the second end of the second wing.

59. The gas stream vortex mixing system of Claim 58, wherein the duct further include a plurality of walls and wherein the first and second wings are non-moveably coupled to a

first and second opposing walls, respectively, within the duct along the same plane in the passageway.

60. The gas stream vortex mixing system of Claim 59, wherein first and second wings are further defined as cambered wings.

61. The gas stream vortex mixing system of Claim 59, wherein first and second wings are non-moveably coupled to the inner surface of the duct at a lift generating angle of attack such that the first ends of the first and second wings are positioned substantially upstream the direction of travel of the gas stream through the passageway and such that the second ends of the first and second wings are substantially down stream of the direction of travel of the gas stream through the passageway.

62. The gas stream vortex mixing system of Claim 58, further comprising:

a third wing having a first end, a second end and configured to shed a vortex at an edge of the second end of the third wing, the third wing non-movably coupled within the passageway of the duct such that the first end of the third wing is positioned along the plane within the passageway of the duct substantially perpendicular to the direction of travel of the gas stream through the passageway;

a third nozzle to discharge a mixture into the passageway, the third nozzle located adjacent the edge of the second end of the third wing such that the third nozzle discharges the mixture into the vortex at a

point wherein the vortex is shed by the edge of the second end of the third wing.

63. The gas stream vortex mixing system of Claim 62, further comprising:

a fourth wing having a first end, a second end and configured to shed a vortex at an edge of the second end of the fourth wing, the fourth wing non-movably coupled within the passageway of the duct such that the first end of the fourth wing is positioned along the plane within the passageway of the duct substantially perpendicular to the direction of travel of the gas stream through the passageway; and

a fourth nozzle to discharge a mixture into the passageway, the fourth nozzle located adjacent the edge of the second end of the fourth wing such that the fourth nozzle discharges the mixture into the vortex at a point wherein the vortex is shed by the edge of the second end of the fourth wing.

64. The gas stream vortex mixing system of Claim 63, wherein the duct further include a plurality of walls and wherein the first and second wings are non-moveably coupled to an opposing first and second walls, respectively, within the duct and wherein the third and fourth wings are non-moveably coupled to an opposing third and fourth walls, respectively, within the duct such that the first ends of the first, second, third and fourth wings are located along the plane in the passageway of the duct.

65. The gas stream vortex mixing system of Claim 64, wherein first, second, third and fourth wings are further defined as cambered wings.

66. The gas stream vortex mixing system of Claim 64, wherein the first, second, third and fourth nozzles are positioned to discharge the mixture in the direction of travel of the gas stream through the passageway of the duct to promote mixing of the mixture with the gas stream.

67. The gas stream vortex mixing system of Claim 64, wherein the first, second, third and fourth nozzles are positioned to discharge the mixture in a direction substantially opposite the direction of travel of the gas stream through the passageway of the duct to promote mixing of the mixture with the gas stream.

68. A vortex mixing system for mixing a combustion gas exhaust, the vortex mixing system comprising:

a combustion exhaust duct provided with an inner surface defining a passageway for communicating a combustion gas exhaust;

a first wing having a first end, a second end, an upper surface, a lower surface and configured to shed a vortex at an edge of the second end of the first wing, the first wing non-movably coupled within the passageway of the combustion exhaust duct such that a first end of the first wing located along a plane within the passageway of the combustion exhaust duct, the plane substantially perpendicular to a direction of travel of the combustion gas exhaust through the passageway, and wherein the first wing having a

uniform thickness between the upper and lower surfaces extending from the first end to the second end of the first wing;

a second wing having a first end, a second end, an upper surface, a lower surface and configured to shed a vortex at an edge of the second end of the second wing, the second wing non-movably coupled within the passageway of the combustion exhaust duct such that a first end of the second wing located along the plane within the passageway of the combustion exhaust duct substantially perpendicular to the direction of travel of the combustion gas exhaust through the passageway, and wherein the second wing having a uniform thickness between the upper and lower surfaces extending from the first end to the second end of the second wing;

a first nozzle to discharge a mixture into the passageway, the first nozzle located adjacent the edge of the second end of the first wing such that the first nozzle discharges the mixture into the vortex at a point wherein the vortex is shed by the edge of the second end of the first wing, the first nozzle further positioned to discharge the mixture in a direction opposite the direction of travel of the combustion gas exhaust through the passageway; and

a second nozzle to discharge a mixture into the passageway, the second nozzle located adjacent the edge of the second end of the second wing such that the second nozzle discharges the mixture into the vortex at a point wherein the vortex is shed by the edge of the

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second end of the second wing, the second nozzle further positioned to discharge the mixture in the direction opposite the direction of travel of the combustion gas exhaust through the passageway.